

## **REMARKS**

The above amendments and these remarks are responsive to the Office action dated April 20, 2004. In the Office action, the Examiner rejected claims 6 and 7 under 35 U.S.C. § 112, second paragraph; rejected claims 1-10, 12, 17, and 50 under 35 U.S.C. § 103(a) over de Sauvage et al. in view of Schindele et al.; and rejected claims 47-49 under 35 U.S.C. § 103(a) over Sauvage et al. in view of Schindele et al. and further in view of Chaudiere et al. Applicants have canceled claims 5 and 6, amended claims 1-4, 7, 17, and 50, and added new claims 51-60. In view of the above amendments and the following remarks, applicants request reconsideration and allowance of the claims under 37 C.F.R. § 1.111.

### **I. Rejections under 35 U.S.C. § 112**

The Examiner rejected claims 6 and 7 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants respectfully disagree, and suggest that one of ordinary skill in the art, provided with the guidance of the specification, would well understand the claimed subject matter definitely and particularly.

However, in the interest of facilitating the prosecution of the application, claim 6 has been canceled, and claim 7 has been amended as set out above.

With respect to claim 6, the rejection of the claim under 35 U.S.C. § 112, second paragraph is therefore moot.

With respect to claim 7, the Examiner has indicated that it is unclear whether or not the phosphorylation step in claim 7 refers to the phosphorylation step in claim 1. Applicants have amended claim 7 to more particularly define their invention.

Specifically, claim 7 as amended sets out that the luminescent peptide includes at least one phosphate group, and that unlabeled phosphorylated protein is being formed that will compete with the luminescent phosphorylated protein in binding to the binding partner. Applicants suggest that in view of the above amendments, claim 7 is both particular and distinct in reciting the claimed subject matter.

In view of the above amendments and remarks, Applicants respectfully request that the rejection of claim 7 under 35 U.S.C. § 112, second paragraph, be withdrawn.

Applicants take this opportunity to amend additional claims so as to more clearly define the claimed invention. In particular, claims 1-4, 17, and 50 have been amended. Additionally, new claims 51-60 are added. Applicants suggest that the above amendments serve to more particularly recite the claimed subject matter.

## **II. Rejections under 35 U.S.C. § 103**

### **A. Claims 1-10, 12, 17, and 50**

The Examiner rejected claims 1-10, 12, 17, and 50 under 35 U.S.C. § 103(a) as being unpatentable over de Sauvage et al. (U.S. Patent No. 6,022,708), in view of Schindele et al., (U.S. Patent No. 5,494,793). Applicants traverse these rejections.

The Examiner suggests that it would have been obvious to provide the immunoassay method taught by Schindele et al. as the immunoassay method used to measure the amount of substrate phosphorylated in the de Sauvage et al. method, since the Schindele et al. method is a known immunoassay that is desirable for enhancing the performance of a detectable marker. Applicants respectfully disagree.

To establish the *prima facie* obviousness of the rejected claims, the cited references must satisfy three basic criteria. First, there must be some suggestion or motivation within the prior art itself to modify the reference or to combine the reference

teachings as suggested by the Examiner. Second, the prior art itself must provide a reasonable expectation of success. Third, the prior art references must teach or suggest every element of the claims. Applicants suggest that the Examiner has failed to establish the *prima facie* obviousness of the rejected claims, for at least the reasons that the cited references fail to provide a suggestion or motivation to combine the reference teachings, as suggested by the Examiner, and fail to teach or suggest all the claim elements.

Claim 1, as amended, recites a binding partner that includes an entrapped metal that selectively binds to phosphorylated peptides, while claim 50 recites a binding partner that includes gallium involved in binding between the binding partner and the peptide. Applicants suggest that neither de Sauvage et al. nor Schindele et al. disclose assays that utilize binding partners that include a metal that selectively binds to a phosphorylated peptide.

The de Sauvage et al. reference, in particular, describes kinase assays in which "an antibody ... may be used which is specific for phosphorylated moieties formed during the reaction" (col. 33, lines 9-12). Applicants suggest that antibody-peptide binding is distinct from the use of a binding partner that includes an entrapped metal.

The Schindele et al. reference discloses phthalocyanines derivatives that are useful as fluorophores. Schindele et al. itself discloses that the phthalocyanines "may or may not be metallated" (at col. 4, lines 33-35), indicating that the metal is not critical to the use of the phthalocyanines as a fluorescent label. Even when the metal is present, however, the metal takes no part in the association of the fluorescent label to the labeled substance. For example, the phthalocyanines are disclosed as useful detectable markers in immunoassays when "conjugated either directly or indirectly to the antigen,

oligonucleotide, nucleic acid, or antibody of interest.” Again, applicants suggest that immunological binding is distinct from selective binding via the metal center.

The Examiner suggests that one of ordinary skill would be led by de Sauvage et al. and Schindele et al. to measure luminescence polarization from the luminescent peptide, and relate the measured luminescence polarization to the extent of binding between the luminescent peptide and the binding partner. Applicants disagree.

Schindele et al. state that compound 1 of that reference “is also suitable for a homogeneously based assay using fluorescence polarization changes upon antigen-antibody interaction,” in particular when the fluorescent label is tethered to a small antigen (col. 12, lines 28-35). As suggested above, antigen-antibody interaction is distinct from the metal-phosphorylated interaction recited in the rejected claims, and would not suggest the claimed invention. In addition, the teaching of Schindele et al. contradicts the teaching of de Sauvage et al. In particular, when describing kinase assays, de Sauvage et al. state that “preferably, the substrate is attached to a solid support surface by means of non-specific or, preferably, specific binding.” Further, de Sauvage et al. suggests a variety of alternative methods of immobilizing the substrate on a solid surface, including physical immobilization and covalent conjugation, or via antibodies. (col. 33, lines 38-60).

Attachment of the substrate to a solid surface would prevent the utilization of luminescence polarization in the assay, as luminescence polarization measurements require that the labeled substance of interest be permitted to rotate and tumble freely in solution. De Sauvage et al. therefore not only teaches away from the combination suggested by the Examiner, but the combination of the teachings of de Sauvage et al. and Schindele et al. would result in an inoperative assay. Where the teachings of the

cited references conflict, or where the combination changes the principle of operation of a reference, there can be no motivation to combine the references (MPEP § 2143.01).

Applicants suggest that de Sauvage et al. and Schindele et al., taken singly or in combination, fail to establish the *prima facie* obviousness of claims 1 and 50, for at least the reasons provided above. Applicants suggest that as claims 2-4, 7-10, 12, 17, 47-49, depend directly or indirectly from claim 1, that they are similarly not rendered obvious by the cited references. Applicants respectfully request the withdrawal of the rejection of the claims under 35 U.S.C. § 103.

**B     Claims 47-50**

The Examiner rejected claims 47-49 under 35 U.S.C. § 103(a) as being unpatentable over de Sauvage et al. in view of Schindele et al., as applied to claim 1 above, and further in view of Chaudiere et al. (U.S. Patent No. 5,861,262). Applicants traverse these rejections.

Applicants suggest, for at least the reasons set out above, that the de Sauvage et al. and Schindele et al. references fail to establish the *prima facie* obviousness of claim 50, that there is no suggestion or motivation to combine the de Sauvage et al. and Schindele et al. references, and that the cited references fail to teach or disclose every element of the claim. Applicants further suggest that the Chaudiere reference similarly fails to establish the *prima facie* obviousness of claims 47-49 singly, or in combination with de Sauvage et al. or Schindele et al. Applicants therefore respectfully request the withdrawal of the rejection of claims 47-49 under 35 U.S.C. § 103.

### III. New Claims

Applicants have added new claims 51-60 to more particularly point out and distinctly claim aspects of the invention. These claims are supported by the previously presented claims and/or the specification.

### IV. Conclusion

Applicants believe that this communication is fully responsive to the Office Action, and that the claims are currently in condition for allowance. However, if there are any remaining matters, or if it would otherwise advance prosecution of the application, the Examiner is encouraged to call the undersigned attorney at (503) 224-6655.

Applicants believe that this application is now in condition for allowance, in view of the above amendments and remarks. Accordingly, applicants respectfully request that the Examiner issue a Notice of Allowability covering the pending claims. If the Examiner has any questions, or if a telephone interview would in any way advance prosecution of the application, please contact the undersigned attorney of record.

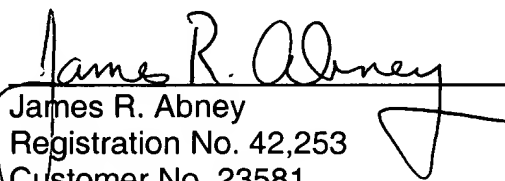
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